Studies on the Kinetics of Uptake of Nitrate and Ammonium by Phytoplankton

Michael Parker
University of Wyoming

Follow this and additional works at: http://repository.uwyo.edu/jhrs_reports

Recommended Citation
Available at: http://repository.uwyo.edu/jhrs_reports/vol1971/iss1/17

This Research Project Report is brought to you for free and open access by Wyoming Scholars Repository. It has been accepted for inclusion in Jackson Hole Research Station Annual Report by an authorized editor of Wyoming Scholars Repository. For more information, please contact scholcom@uwyo.edu.
Studies on the Kinetics of Uptake of Nitrate and Ammonium by Phytoplankton
Michael Parker
Zoology and Physiology
University of Wyoming
Project Number 165

Several experiments to evaluate rates of nitrate and ammonium uptake by phytoplankton were conducted using methodology described in the 1970 report. Because of breakdowns of the mass spectrometer most experiments have not been analyzed. However, preliminary data from Swan Lake indicate that the hypothesized relation between nutrient concentration and $K_t$ may hold; as dissolved nitrate concentrations decreased from 24.3 $\mu$M/liter to 2.5 $\mu$M/Liter, $K_t$ decreased from 1.17 $\mu$M/liter to 0.0004 $\mu$M/liter. Phytoplankton counts are nearing completion, and in conjunction with autoradiographs should aid in interpreting the data on a species or generic level as well as on the community level.

Work was begun on biochemical predator defense in algae. Algae were collected and aqueous extracts made. Zooplankters showed marked behavioral changes in the presence of the extract. Experiments will shortly be under way to evaluate whether the zooplankters are attracted to, or repelled by the extracts.

Supported by the University of Wyoming and National Science Foundation grant GB-16847.